RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL & GAS DOCKET NO. 09-0295894

THE APPLICATION OF VANTAGE FORT WORTH ENERGY LLC PURSUANT TO THE MINERAL INTEREST POOLING ACT FOR THE FORMATION OF A POOLED UNIT FOR THE YEANDLE-MFH MIPA 5H WELL IN THE NEWARK, EAST (BARNETT SHALE) FIELD, TARRANT COUNTY, TEXAS

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HEARD BY: Cecile Hanna – Administrative Law Judge
Brian Fancher – Technical Examiner

DATE OF HEARING: June 2, 2015
DATE OF CONFERENCE: October 20, 2015

FOR APPLICANT VANTAGE FORT WORTH ENERGY LLC:

John K. Hicks, Scott, Douglass & McConnico, LLP
Matthew J. Montgomery
Rick Johnston

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Vantage Fort Worth Energy LLC *("Vantage")* has filed three applications under the Texas Mineral Interest Pooling Act (the *"MIPA")*, Chapter 102 of the Texas Natural Resources Code. The three dockets were consolidated for the purpose of a joint hearing record. By its applications, Vantage is requesting that the Commission enter orders creating three force-pooled units: the Yeandle-MFH 5H MIPA Unit (the *"5H Unit")* with its proposed Well No. 5H, the Yeandle-MFH 6H MIPA Unit (the *"6H Unit")* with its proposed Well No. 6H, and the Yeandle-MFH 7H MIPA Unit (the *"7H Unit")* with its proposed Well No. 7H. If the applications are approved, Vantage intends to drill the MIPA wells as horizontal wells in the Newark, East (Barnett Shale) Field (the *"Field"*) in Tarrant County, Texas. The applications are unprotested. The ALJ and Technical Examiner recommend approval.

APPLICABLE LAW

The MIPA is an act by the legislature largely to protect small tract owners and operators in the wake of the *Normanna* decision,[1] which invalidated prorationing formulas with large per well allowable factors allowing substantial uncompensated drainage by wells on small tracts. Traditionally, the MIPA has been construed as limited in function to protect small tract lessees or owners rather than as a broad act designed to protect correlative rights generally, or as an act allowing large tract lessees or owners more flexibility in development. Smith and Weaver, *Texas Law of Oil and Gas*, Vol. 3, Chapter 12, § 12.1(B) at page 12-5 (LexisNexis Matthew Bender 2015).

Subject to limitations found elsewhere in the act, Section 102.011 of the MIPA provides that:

> [w]hen two or more separately owned tracts of land are embraced in a common reservoir of oil or gas for which the commission has established the size and shape of proration units, whether by temporary or permanent field rules, and where there are separately owned interests in oil and gas within an existing or proposed proration unit in the common reservoir and the owners have not agreed to pool their interests, and where at least one of the owners of the right to drill has drilled or has proposed to drill a well on the existing or proposed proration unit to the common reservoir, the commission, on the application of an owner specified in Section 102.012 of [the MIPA] and for the purpose of avoiding the drilling of unnecessary wells, protecting correlative rights, or preventing waste, shall establish a unit and pool all of the interests in the unit within an area containing the approximate acreage of the proration unit, which unit shall in no event exceed 160 acres for an oil well or 640 acres for a gas well plus 10 percent tolerance.

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[1] *Atlantic Ref. Co. v. R.R. Commn.*, 346 S.W.2d 801 (Tex. 1961).

DISCUSSION OF THE EVIDENCE

Vantage's Evidence

All three of the proposed MIPA units are located at the south end of Lake Arlington. The proposed units adjoin one another. Each of the proposed units includes acreage from Vantage's Yeandle Voluntary Pooled Unit, Vantage's Martin Forest Hills ("MFH") Voluntary Pooled Unit, and unleased acreage.[2]

The proposed 5H Unit contains 71.14 total acres comprised of 245 separate tracts. At the time of hearing, Vantage had leases on 233 tracts containing 68.45 mineral acres, which is 96.22% of the total acreage in the 5H Unit. The proposed 5H Unit includes 12 unleased tracts, containing 2.69 acres, which is 3.78% of the total acreage.[3]

The proposed 6H Unit contains 75.36 total acres comprised of 279 separate tracts. At the time of hearing, Vantage had leases on 271 tracts containing 74.55 mineral acres, which is 98.93% of the total acreage in the 6H Unit. The proposed 6H Unit includes 8 unleased tracts, containing 0.81 acres, which is 1.07% of the total acreage.[4]

The proposed 7H Unit contains 73.38 total acres comprised of 253 separate tracts. At the time of hearing, Vantage had leases on 249 tracts, containing 72.35 mineral acres, which is 98.60% of the total acreage in the 7H Unit. The proposed 7H Unit includes 4 unleased tracts, containing 1.03 acres, which is 1.40% of the total acreage.[5]

Field, Discovery Date and State of Texas Ownership

The MIPA does not apply in fields discovered and produced before March 8, 1961, and it does not apply to land in which the State of Texas has an interest unless the State has given consent,[6] but neither of these exceptions apply to this case. Vantage's witnesses testified that the proposed MIPA units lie within the productive limits of the Newark, East (Barnett Shale) Field, which was discovered in 1981,[7] and that none of the interests affected by the applications are owned by the State of Texas.[8]

The Voluntary Pooling Offer

On February 24, 2015, Vantage sent a voluntary pooling offer to all mineral owners of unleased tracts within the boundaries of the proposed units.[9] Vantage offered these unleased mineral owners four options for inclusion of their interests in the respective proposed units: two lease options, a working-interest participation option, and a farm-out option.[10]

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[2] Tr. 35; Ex. 6.
[3] Tr. 58-59; Ex. 12.
[4] Tr. 58-59; Ex. 12.
[5] Tr. 58-59; Ex. 12.
[6] MIPA §§ 102.003, 102.004.
[7] Tr. 95; Ex. 23.
[8] Tr. 19.
[9] Tr. 48-49; Exs. 11A-C.
[10] Tr. 49.

The first lease option included a 25% royalty and a bonus of $3,000 per net mineral acre.[11] The oil, gas, and mineral lease attached to the offer letter had a primary term of three years.[12]

The second lease option was to lease with a 20% royalty and a bonus of $3,500 per net mineral acre.[13] Except for the different royalty and bonus amounts, this second lease option was identical to the first lease option. The oil, gas and mineral lease attached to the offer letter provided that Vantage was authorized to pool the tract owner's mineral interest into a pooled unit. The lease provided that the lessee could drill a horizontal well beneath the surface of the leased premises but could not conduct drilling operations on the surface of the lease.[14]

The participation option provided each unleased owner an opportunity to participate as a working interest owner in the respective proposed unit. By electing this option, the owner would be responsible for his or her proportionate share of the costs of drilling and completing the well or wells in the unit and would share proportionately in the production from the well. Each offer letter had as an attachment an AFE (Authorization for Expenditure) indicating the estimated cost to complete and drill the relevant well. The estimated cost for Well No. 5H was $3,671,775; for the 6H, $3,943,414; and for the 7H, $3,776,449. This option stated that if the owner failed to fully pay his or her proportionate share of costs to Vantage within 15 days prior to commencement of actual drilling operations, then the owner would be subject to the non-consent penalties set forth in the standard Joint Operating Agreement (the *"JOA")* proposed by Vantage.

Vantage represented to each owner that the proposed JOA would not contain any of the following: (1) a preferential right of the operator to purchase mineral interests in the unit; (2) a call on or option to purchase production from the unit; (3) operating charges that may include any part of district or central office expenses other than reasonable overhead charges; or (4) a prohibition against non-operators questioning the operation of the unit.[15]

The farm-out option proposed to each unleased owner that he or she convey to Vantage an 80% net revenue interest attributable to his or her mineral interest and retain an overriding royalty interest equal to 20% of 8/8ths, proportionately reduced to the extent that each owner's mineral interest bears to all of the mineral interests in the unit, until payout of all well costs (to drill, test, fracture stimulate, complete, equip, and connect the well for production). At payout, the electing owner would have the option to convert the retained override to a 25% working interest, proportionately reduced.[16]

Matthew Montgomery, Vantage's landman, testified as to the voluntary pooling offers made by Vantage for each of the three proposed pooled units involved. In response to Vantage's voluntary pooling offers, four unleased owners within the proposed 5H Unit, four unleased owners within the proposed 6H Unit, and two unleased owners within the proposed

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[11] Tr. 49.
[12] Exs. 11A-C.
[13] Tr. 49.
[14] Exs. 11A-C support all statements in the preceding paragraph.
[15] *Id.*
[16] *Id.*

7H Unit entered into a lease with Vantage.[17] Mr. Montgomery testified that, other than these owners who entered into a lease, there were no other responses to Vantage's offers.[18]

Vantage believed that the lease terms included in its voluntary offer were fair and reasonable.[19] Mr. Montgomery stated that Vantage has been entering into leases on the same terms ($3,000 per-acre bonus with a 25% royalty or $3,500 per-acre bonus with a 20% royalty) in the area.[20] Mr. Montgomery also testified that the offers made in conjunction with these applications contained the same terms as in Vantage's offers that were found to be fair and reasonable in Vantage's recent MIPA applications in the nearby Rosedale Gas Project.[21]

Estimated Recovery of MIPA Wells

Vantage's expert petroleum engineering witness, Mr. Rick Johnston, prepared a model to predict recovery from Barnett Shale wells with varying drainhole lengths. Johnston first presented a map showing Barnett Shale wells within a five-mile radius of the terminus point of the Yeandle No. 2H.[22] Mr. Johnson testified that the proposed MIPA wells would be drilled from the same operation site as the Yeandle No. 2H was drilled.[23] Within this five-mile radius, Johnston found 478 wells for which there was adequate production data to consider them as a data point.[24] He calculated the estimated ultimate recoveries (the *"EUR's")* by decline curve analysis and the estimated lateral drainhole length for these 478 wells.[25] Using the EUR as the y-coordinate and the estimated drainhole length as the x-coordinate, he then created a scatter plot of the data points.[26] A computer-generated least-squares regression of the plotted data points resulted in a line through the points with a positive slope of 0.4716 and a y-intercept of 791.[27] The inference of this resulting equation is that an average well within the five-mile radius will recover 0.4716 MMCF of gas for each incremental foot of horizontal drainhole length.[28]

Mr. Johnston performed a volumetric calculation of gas in place beneath the three MIPA units.[29] Based on a cross-section of nearby well logs, Mr. Johnston estimated that the Barnett Shale is approximately 320 feet thick throughout the MIPA units.[30] Volumetric data introduced by Devon Energy at the 2005 field rules hearing indicated that original gas in place was 139 BCF per square mile (640 acres) where the average thickness of the Barnett Shale was

[17] Tr. 58-59, 130; Ex. 12.
[18] Tr. 130.
[19] Tr. 50, 61.
[20] Tr. 50-51.
[21] Tr. 50.
[22] Tr. 63; Ex. 13.
[23] Tr. 64.
[24] Tr. 64, 68; Ex. 16.
[25] Tr. 66-67; Ex. 16.
[26] Tr. 66; Ex. 16.
[27] Ex. 16.
[28] Tr. 67.
[29] Exs. 18A-C.
[30] Tr. 70; Ex. 17.

433 feet.[31] Adjusting for 320 feet thickness, and applying a recovery factor of 45 percent, Johnston calculated the volumes of recoverable gas beneath each MIPA unit.

5H Unit: As proposed, the 5H Unit has, according to Devon's data, 4.9 BCF of recoverable gas beneath the leased acreage.[32] The No. 5H Well has a proposed drainhole length of 7,351 feet. Using this length, the equation derived from the least-squares regression predicts that the No. 5H will have an EUR of 4.26 BCF.

6H Unit: As proposed, the 6H Unit has, according to Devon's data, 5.4 BCF of recoverable gas beneath the leased acreage.[33] The No. 6H Well has a proposed drainhole length of 8,163 feet. Using this length, the equation derived from the least-squares regression predicts that the No. 6H will have an EUR of 4.64 BCF.

7H Unit: As proposed, the 7H Unit has, according to Devon's data, 5.2 BCF of recoverable gas beneath the leased acreage.[34] The No. 7H Well has a proposed drainhole length of 7,734 feet. Using this length, the equation derived from the least-squares regression predicts that the No. 7H will have an EUR of 4.44 BCF.

Mr. Johnston testified that the MIPA wells can reasonably be expected to drain their respective units.[35]

Vantage's development plan for the Yeandle and Martin Forest Hills Units is ultimately to drill 17 wells.[36] Vantage has already drilled eleven wells in the Yeandle Unit and has plans for six additional wells, including the three proposed MIPA wells. Further, the development plan and spacing for the Yeandle and Martin Forest Hills Units incorporates existing wells in the adjacent Steeples Unit, and is for the optimal recovery of gas in this area.[37] Vantage's plats showed that, in spite of the high percentage of acreage under lease, there was no path for the planned wellbores that would not encounter some unleased and unpooled interest.[38] Vantage contends, absent MIPA approval of the proposed wells, the underlying reserve could not be recovered and would therefore, be wasted.[39] Mr. Johnston also testified that MIPA approval was necessary to protect correlative rights by giving Vantage and its lessors a reasonable opportunity to recover their fair share of the oil and gas underlying the proposed units.[40] He calculated that, if the applications were not approved, that the No. 5H would lose 2,501 feet of drainhole length, resulting in lost reserves of 1,179 MMCF; the No. 6H would lose 3,593 feet of drainhole length, resulting in lost reserves of 1,694 MMCF; and the No. 7H would lose 3,409 feet of drainhole length, resulting in lost reserves of 1,608 MMCF.[41]

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[31] Tr. 71.
[32] Ex. 18A.
[33] Ex. 18B.
[34] Ex. 18C.
[35] Tr. 78.
[36] Tr. 36-37.
[37] Tr. 38-39.
[38] Exs 9A(R), 9B(R), 9C(R), 19A(R), 19B(R), 19C(R).
[39] Tr. 75, 115.
[40] Tr. 114-115.
[41] Ex. 20(R).

Risk Penalty

Vantage's applications requested that the Commission's forced-pooling orders include a 100% charge for risk attached to the working-interest component. During the hearing, however, Mr. Montgomery testified that Vantage expects a drilling rig to be at this location in September 2015. Therefore, to allow for the applications to proceed to the Commission's consent agenda without the need for a Proposal for Decision, Mr. Montgomery also stated that it would not consider an Examiners' recommendation for a 50% charge for risk to be an adverse recommendation.[42]

Vantage believes that there exists significant risk that a Barnett Shale well in the area of the MIPA units will be uneconomic, meaning the well will not recover the cost of drilling and completing the well. Using a cost of drilling and completing equal to roughly $3.25 million, a monthly operating expense of $3,500, a gas price of $3.25 per MCF, a ten-year severance tax exemption, and a 10% discount rate, Mr. Johnston found the break-even recovery point, at which the well's cost would be recouped, was roughly 2 BCF.[43]

Mr. Johnston stated that the petroleum evaluation industry characterizes the reserves underlying the proposed MIPA units as proved undeveloped, for which the industry applies a 50 percent risk factor.[44] Applying a 50% risk factor, the anticipated recovery break-even point would be approximately 4 BCF.[45]

Mr. Johnston used the Society of Evaluation Engineers 32nd Annual Survey of Parameters Used in Property Evaluation, dated June 2013, to support the applicability of the 10% discount factor and the 50 percent risk factor for proved, undeveloped reserves.[46] In addition, Mr. Johnston provided a copy of the Texas Comptroller's Manual for Discounting Oil and Gas Income and testified that the method he used of discounting future cash flow and applying reserve adjustment factors is the same method required by the Comptroller.[47]

Mr. Johnston also plotted the non-zero EURs for the 478 Barnett Shale wells within a 5-mile radius of the Yeandle Unit No. 2 well on a probability plot and determined that only 40% of the wells are currently expected to recover at least 2 BCF, which is the break-even point.[48] Using the same plot, Mr. Johnston determined that only 15% of the wells are currently expected to recover the risked payout volume of 4 BCF.[49]

As further evidence regarding the appropriate charge for risk of 100%, Vantage's petroleum land management expert, Mr. Montgomery, testified about the risk factor that

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[42] Tr. 19, 127-129.
[43] Tr. 81-82; Ex. 21(R).
[44] Tr. 99.
[45] Tr. 100.
[46] Tr. 98-99; Ex. 25.
[47] Tr. 97-98; Ex. 24.
[48] Tr. 93-94; Ex. 22.
[49] Tr. 100; Ex. 22.

appears in private joint operating agreements in the field.[50] Mr. Montgomery is aware of seven private operating agreements in the Lake Arlington area, in the vicinity of the proposed MIPA units, and all seven provide for a 400% recovery of costs advanced to a non-consenting owner.[51]

OPINION OF THE ADMINISTRATIVE LAW JUDGE AND TECHNICAL EXAMINER

Under the MIPA, the Commission may order compulsory pooling only if it is necessary to avoid the drilling of unnecessary wells, protect correlative rights, or prevent waste. The evidence in this proceeding demonstrates that compulsory pooling is necessary to protect correlative rights and prevent waste.

Due to the locations of the unleased tracts within the respective proposed units, the MIPA wells could not be drilled as proposed without compulsory pooling. Well 5H would cross four unleased tracts; Well 6H would cross one unleased tract; and Well 7H would cross three unleased tracts and one partially unleased tract. Vantage cannot drill these wells, as proposed, unless compulsory pooling is ordered because of the impracticality and potential impossibility of drilling around the unleased tracts. Therefore, in the absence of compulsory pooling, each mineral interest owner within these proposed units would not be afforded a reasonable opportunity to recover his fair share of hydrocarbons.

Vantage's proposed compulsory pooling will protect correlative rights because the proposed wells are reasonably expected to drain the proposed units. Forced pooling as proposed by Vantage, wherein the proposed well will drain the entire proposed unit, protects correlative rights because each tract owner, whether leased or unleased, will have their fair share of hydrocarbons produced.

Furthermore, the wells and units proposed by Vantage would allow the Commission to fashion an order in compliance with Section 102.017 of the MIPA, which requires that a compulsory pooling order be made on terms that are fair and reasonable and will afford the owner of each tract in the unit the opportunity to produce and receive their fair share. As all tracts within the proposed units would be drained by their respective wells, the owners of each tract would realize the opportunity to produce and receive their fair share.

The ALJ and Technical Examiner believe that Vantage's voluntary pooling offer was fair and reasonable. Vantage's offer followed the framework by providing a lease, participation, and farm-out options that the Commission has determined to be fair and reasonable in other approved MIPA applications for the Barnett Shale. The options Vantage included in its voluntary pooling offer prior to these MIPA applications are the same options as in the voluntary pooling offer found to be fair and reasonable in April 2014 in Oil & Gas Docket Nos. 09-0284751, 09-0284752, 09-0284753, 09-0284754, and in January 2015 in Oil & Gas Docket Nos. 09-0288329, 09-0288331, 09-0288332, and 09-0288333.

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[50] According to Professors Smith & Weaver, the "percentage risk factor that appears in private joint operating agreements in the field" is a factor in the Commission's selection of a charge for risk in a MIPA case. 3 Ernest E. Smith & Jacqueline Lang Weaver, Texas Law of Oil and Gas, § 12.6(B) at page 12-65 (LexisNexis Matthew Bender 2013).

[51] Tr. 123-125.

Charge for Risk

Section 102.052(a) of the MIPA provides:

> As to an owner who elects not to pay his proportionate share of the drilling and completion costs in advance, the Commission shall make provision in the pooling order for reimbursement solely out of production, to the parties advancing the costs, of all actual and reasonable drilling, completion, and operating costs plus a charge for risk not to exceed 100 percent of the drilling and completion costs.

Vantage's applications originally requested a 100% charge for risk be applied to the working interest portion of an owner who elects not to pay his proportionate share of the drilling and completion costs in advance. At the hearing, however, Mr. Montgomery testified that it has a drilling rig scheduled to arrive at the Yeandle pad site in September 2015.[52] Based on this drilling schedule, Mr. Montgomery stated that Vantage would not consider a recommendation of a 50% charge for risk to be adverse if it would clear the way for the submission of this case on the unprotested docket via an Examiners' Report and Recommendation in lieu of a Proposal for Decision.

The ALJ and Technical Examiner believe that a 50% charge for risk is fair and reasonable, as required by Section 102.017 of MIPA, and is appropriate under Section 102.052 of MIPA. A 50% charge for risk is also consistent with Oil & Gas Docket Nos. 09-0284751, 09-0284752, 09-0284753, 09-0284754, approved in April 2014; and Docket Nos. 09-0288329, 09-0288331, 09-0288332, and 09-0288333, approved in January 2015.

Under the Commission's practice of providing the unleased owners with a cost-free royalty at the market rate for leases in the area, the unleased owners are in as good or better position than all of the other lessors in the MIPA units. The charge for risk is applicable only to the reimbursement to the parties advancing costs that is required under MIPA Section 102.052 and that is made solely out of production. This would apply only to the portion of the unleased owners' mineral interest that is treated as a cost-bearing working interest.

To support its position that there is significant risk involved in drilling Barnett Shale wells in the area, Vantage demonstrated that, under a probabilistic analysis, only 15% of the wells in the 5-mile radius are expected ultimately to recover 4 BCF, which is the risked break-even point under the existing petroleum evaluation engineering standards.[53] Furthermore, private operating agreements in the area provide for a non-consent charge of risk of 400%.[54]

Based on the record in this case, the ALJ and Technical Examiner recommend adoption of the following Findings of Fact and Conclusions of Law:

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[52] Tr. 19, 127-129.
[53] Tr. 100 and Ex. 22.
[54] Tr. 123-125.

FINDINGS OF FACT

1. Notice of the hearing was mailed to all interested parties at mailing addresses provided by the Applicant, Vantage Fort Worth Energy *("Vantage")*, at least 30 days prior to the hearing date.[55]

2. Notice of the hearing was published in the Commercial Recorder on April 22, April 29, May 6, and May 13, 2015.[56]

3. No one appeared at the hearing in opposition to Vantage's applications.

4. Appendix 1 to the Final Orders of the instant dockets, Oil & Gas Docket Nos. 09-0295894, 09-0295895, and 09-0295896, incorporated into this finding by reference, is a plat for the Yeandle Unit and Martin Forest Hills (MFH) Unit (Vantage Exhibit No. 8), which also shows the external boundaries of the three proposed MIPA units, the proposed paths of the MIPA wells, and the unleased tracts within the Yeandle Unit and MFH Unit.

5. Appendix 2 to the Final Order for Oil & Gas Docket No. 09-0295894, incorporated into this finding by reference, is a plat for the proposed Yeandle-MFH 5H MIPA Unit (the *"5H Unit")* (Vantage Exhibit No. 9A(R)) showing the proposed wellbore path of Well 5H and the unleased and partially-leased tracts within the 5H Unit.

6. Appendix 2 to the Final Order for Oil & Gas Docket No. 09-0295895, incorporated into this finding by reference, is a plat for the proposed Yeandle-MFH 6H MIPA Unit (the *"6H Unit")* (Vantage Exhibit No. 9B(R)) showing the proposed wellbore path of Well 6H and the unleased and partially-leased tracts within the 6H Unit.

7. Appendix 2 to the Final Order for Oil & Gas Docket No. 09-0295896, incorporated into this finding by reference, is a plat for the proposed Yeandle-MFH 7H MIPA Unit (the *"7H Unit")* (Vantage Exhibit No. 9C(R)) showing the proposed wellbore path of Well 7H and the unleased and partially-leased tracts within the 7H Unit.

8. On February 24, 2015 Vantage sent a voluntary pooling offer to all mineral owners of unleased tracts within the boundaries of the proposed MIPA units.[57] The unleased mineral owners were offered four options for inclusion of their interests in the proposed units: two lease options, a working-interest participation option, and a farm-out option.

    a. The first lease option included a 25% royalty and a bonus offer of $3,000 per net mineral acre, for a three-year primary term. The oil, gas, and mineral lease attached to the offer letter provided that Vantage was authorized to pool the tract owner's mineral interest into a pooled unit and drill a horizontal well beneath the

[55] Ex. 3.
[56] Exs. 4, 28.
[57] Exs. 11A-11C; Tr.48-52.

surface of the leased premises but could not conduct drilling operations on the surface of the lease.

b. The second lease option included a 20% royalty and a bonus offer of $3,500 per net mineral acre. Except for the different royalty and bonus amounts, this second lease option was identical to the first lease option.

c. The participation option provided each unleased owner an opportunity to participate as a working interest owner in the respective proposed unit. By choosing this option, the owner would be responsible for his or her proportionate share of the costs of drilling and completing the well or wells in the unit and would share proportionately in the production from the well. Each offer letter had as an attachment an AFE (Authorization for Expenditure) indicating the estimated cost to complete and drill the relevant well.

The estimated cost for Well No. 5H was $3,661,775; for the 6H, $3,943,414; and for the 7H, $3,776,449. The participation option stated that if the owner failed to fully pay his or her proportionate share of costs to Vantage within 15 days prior to commencement of actual drilling operations, then the owner would be subject to the non-consent penalties set forth in the standard Joint Operating Agreement (the "JOA") proposed by Vantage.

Vantage represented to each owner that the proposed JOA would not contain any of the following: (1) a preferential right of the operator to purchase mineral interests in the unit; (2) a call on or option to purchase production from the unit; (3) operating charges that may include any part of district or central office expenses other than reasonable overhead charges; or (4) a prohibition against non-operators questioning the operation of the unit.

d. The farm-out option proposed to each unleased owner that he or she convey to Vantage an 80% net revenue interest attributable to his or her mineral interest and retain an overriding royalty interest equal to 20% of 8/8ths, proportionately reduced to the extent that each owner's mineral interest bears to all of the mineral interests in the unit, until payout of all well costs (to drill, test, fracture stimulate, complete, equip, and connect the well for production). At payout, the electing owner would have the option to convert the retained override to a 25% working interest, proportionately reduced.

9. Vantage provided the essential terms of the participation option and the farm-out option in its offer letter. Vantage did not enclose copies of its participation agreement or farm-out agreement, but instead offered to provide a copy of its participation agreement and farm-out agreement to any mineral owner who was interested in one or both of those options. None of the mineral owners expressed an interest in either the participation option or the farm-out option.

10. In response to Vantage's voluntary pooling offer, four unleased owners in the proposed 5H Unit, four unleased owners in the proposed 6H Unit, and two unleased owners in the proposed 7H Unit entered into a lease with Vantage.[58]

11. The options included in the voluntary pooling offer made by Vantage contained the same options as the voluntary pooling offer the Commission found to be fair and reasonable in Vantage's prior MIPA applications.[59] (Oil & Gas Docket Nos. 09-0284751, 09-0284752, 09-0284753, 09-0284754, approved in April 2014; and Docket Nos. 09-0288329, 09-0288331, 09-0288332, and 09-0288333, approved in January 2015.)

12. The tracts within each proposed MIPA unit are embraced in the Newark, East (Barnett Shale) Field, a common reservoir of oil or gas for which the Commission has established the size and shape of proration units. The Newark, East (Barnett Shale) Field is present and reasonably productive in the area covering all of the proposed units.[60]

13. The Newark, East (Barnett Shale) Field was discovered in 1981. This field has special field rules providing for 330-foot lease-line spacing, and there is no between-well spacing requirement. The standard drilling and proration unit for the Newark, East (Barnett Shale) is 320 acres. An operator is permitted to form optional drilling units of 20 acres.[61]

14. Vantage estimated the volumetrically-calculated gas in place beneath the leased acreage within three proposed units. Vantage calculated that the recoverable gas in place beneath the proposed 5H Unit is 4.9 BCF; the 6H Unit is 5.4 BCF; and the 7H Unit is 5.2 BCF.[62]

15. Vantage created a scatter plot of the estimated ultimate recoveries (the *"EURs")* versus the estimated drainhole length for Barnett Shale wells within five miles of the Yeandle Unit Well No. 2H. A computer-generated least-squares regression of the data points on the plot resulted in a line with a positive slope of 0.4716 and a y-intercept of 791.[63] Vantage inferred that the equation for this line means that an average well in the area will recover 791 MMCF of gas plus an additional 0.4716 MMCF for each incremental foot of drainhole length.[64] Using a 45 percent recovery factor, Vantage calculated as follows:

    a. The proposed drainhole length of Well No. 5H is 7,351 feet. Based on this length, the equation predicts an EUR of 4.26 BCF.

    b. The proposed drainhole length of Well No. 6H is 8,163 feet. Based on this length, the equation predicts an EUR of 4.64 BCF.

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[58] Tr. 58-59.
[59] Tr. 50.
[60] Tr. 69; Ex. 17.
[61] Tr. 95; Ex. 23.
[62] Exs. 18A-C
[63] Ex. 16.
[64] Tr. 67.

c. The proposed drainhole length of Well No. 7H is 7,734 feet. Based on this length, the equation predicts an EUR of 4.44 BCF.[65]

16. Vantage cannot drill the three proposed wells unless compulsory pooling is ordered as requested.[66]

a. Proposed Well 5H cannot be drilled without compulsory pooling of multiple tracts. The 5H would traverse four unleased tracts.

b. Proposed Well 6H cannot be drilled without compulsory pooling. The 6H would traverse one unleased tract.

c. Proposed Well 7H cannot be drilled without compulsory pooling of multiple tracts. The 7H would traverse three unleased tracts and one partially unleased tract.

17. There are no regular locations within the proposed units where a feasible horizontal well could drain the proposed unit.[67]

18. The proposed MIPA wells will reasonably drain the proposed MIPA units.[68]

19. Compulsory pooling within each of the three units as requested by Vantage will protect the correlative rights and prevent waste. Without compulsory pooling, Vantage will not be able to drill the proposed wells, Vantage and its lessees will not have a reasonable opportunity to recover their fair share of hydrocarbons from the reservoir, and the underlying hydrocarbons will be left unrecovered.

20. Vantage presented evidence supporting a charge for risk of 50 percent of the drilling and completion costs of the respective well.

a. Vantage's engineering expert plotted the estimated ultimate recoveries for the wells within a 5-mile radius of the Yeandle No. 2 Well on a probability plot and determined that 15% of these wells are expected ultimately to recover at least 4 BCF, which is the risked break-even point.

b. Seven private operating agreements in the area provide for a non-consent penalty charge for risk of 400%.

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[65] Exs. 18A-C.
[66] Tr. 76-77.
[67] Tr. 75, 115.
[68] Tr. 78.

CONCLUSIONS OF LAW

1. Pursuant to Texas Natural Resources Code § 102.016, notice of the hearing was given to all interested parties by mailing the notices to their last known addresses at least 30 days before the hearing and, in the case of parties whose whereabouts were unknown, by publication of notice for four consecutive weeks in a newspaper of general circulation in the county where the proposed unit is located at least 30 days before the hearing.

2. The Commission has jurisdiction over the parties and the subject matter and has authority to issue a compulsory pooling order pursuant to Texas Natural Resources Code § 102.011.

3. Vantage made a fair and reasonable offer to pool voluntarily to the mineral owners of the unleased tracts within each of the proposed units, as required by Texas Natural Resources Code § 102.013.

4. Compulsory pooling of the owners of the unleased tracts within each of the proposed proration units as owners of a 25% royalty and 75% working interest, proportionately reduced, with these owners' share of expenses, subject to a charge for risk of 50%, payable only from the owners' working-interest component, and subject to a no-surface-use restriction, is fair and reasonable within the meaning of Texas Natural Resources Code § 102.017.

5. Compulsory pooling of the mineral interests in all tracts within the boundaries of the 5H Unit, 6H Unit, and 7H Unit will serve the purpose of protecting correlative rights.

6. The terms and conditions of the Commission's Final Order in this proceeding are fair and reasonable and will afford the owner of each tract or interest in each respective unit the opportunity to produce or receive his fair share.

RECOMMENDATION

The ALJ and Technical Examiner recommend that Vantage's applications be approved, subject to conditions, as set forth in the attached recommended Final Orders.

Respectfully Submitted,

Cecile Hanna
Administrative Law Judge

Respectfully Submitted,

Brian Fancher
Technical Examiner